

WHAT IS CLAIMED IS:

1. A nozzle vane driving control apparatus of a variable nozzle turbocharger comprising:

(A) an actuator for carrying out a driving operation  
5 for opening and closing a nozzle vane of a variable nozzle, the actuator including

a base having a motor case portion,

a motor having a motor shaft to be accommodated in the motor case portion,

10 a pinion coupled to the motor shaft of the motor, an output shaft having a sector gear supported rotatably on the base and mated with the pinion through reduction gears,

an output arm fixed to an upper portion of the output  
15 shaft and connected to the nozzle vane, and

an actuator cover for covering the pinion and the reduction gears; and

(B) an electronic control unit for controlling an opening degree of the nozzle vane which is obtained by  
20 the actuator, the electronic control unit including

a unit body attached removably to a lower end of the base,

a control board accommodated in the unit body,

a position sensor attached to a lower portion of  
25 the output shaft opposite to the control board and serving

to detect a rotating position of the output shaft,

a connector having a terminal accommodated in the unit body and connecting the motor and the control board, and

5 a unit cover for covering the unit body;

wherein the actuator cover, the base, the unit body and the unit cover are removably attached by fastening members and are thus integrated with each other.

10 2. The nozzle vane driving control apparatus of the variable nozzle turbocharger according to claim 1, wherein a brushless motor is used as the motor.

3. The nozzle vane driving control apparatus of the  
15 variable nozzle turbocharger according to claim 1, wherein a pair of the control boards are provided opposite to each other interposing a partition wall of the unit body therebetween in a vertical direction, and

electronic chip components which generate heat are  
20 mounted on the lower control board.

4. The nozzle vane driving control apparatus of the variable nozzle turbocharger according to claim 1, wherein the position sensor for detecting a position of  
25 the output shaft is a non-contact type sensor.

1 2 3 4

5. The nozzle vane driving control apparatus of the variable nozzle turbocharger according to claim 4, wherein the position sensor is constituted by a magnet  
5 attached to the lower portion of the output shaft through a holder, and a magneto-resistive element mounted on a surface of the upper control board which is opposed to the magnet and serving to detect a direction of a magnetic field of the magnet.

10